

REMARKS

Claims 1 and 6-16 are pending in this application. By this Amendment, claim 1 is amended.

In sections 2-7 on pages 2-6, the Office Action rejects claims 1, 6-9, 14 and 15 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,095,243 to Kinoshita et al. (hereinafter "Kinoshita") in view of U.S. Patent No. 5,045,696 to Hirose and U. S. Patent No. 5,333,083 to Nagai et al. (hereinafter "Nagai"). In sections 8-10 on pages 6-8, the Office Action rejects claims 10-12 under 35 U.S.C. §103(a) as being unpatentable over Kinoshita, Hirose and Nagai, and further in view of U.S. Patent No. 5,569,916 to Tomie. In section 11 on pages 8-9, the Office Action rejects claim 13 under 35 U.S.C. §103(a) as being unpatentable over Kinoshita, Hirose, Nagai and Tomie, and further in view of Tamura et al. (hereinafter "Tamura"). In section 12 on page 9, the Office Action rejects claim 9 under 35 U.S.C. §103(a) as being unpatentable over Kinoshita, Hirose and Nagai, and further in view of Tamura. These rejections are respectfully traversed.

The Office Action asserts that the concept of placing a specimen on the photocathode would be advantageous in the electron image enlarging device of either Hirose or Kinoshita for purposes of compacting the apparatus. Applicants respectfully disagree.

It is impossible to compact an apparatus only by placing a specimen on a photocathode. An apparatus can be compacted by a combination of three elements, i.e., an X-ray generator including a laser, a specimen held on a photocathode, and an electron image enlarging device, as recited in claim 1.

Accordingly, it is respectfully asserted that a person skilled in the art cannot arrive at the claimed invention even if Hirose is combined with Kinoshita.

The Office Action asserts that the grid 8 of Hirose corresponds to an acceleration anode of the present invention. However, the grid 8 of Hirose does not accelerate elements because

the grid 8 has a negative potential with respect to the specimen holder 3. See col. 3, lines 39-42. In the photoelectron microscope described in Hirose, a negative potential is applied to the grid 8 in order to prevent a deterioration of the resolution. If a positive potential is applied to the grid 8, the resolution of the microscope is certainly deteriorated so that a quality of an image is degraded.

The Office Action asserts that Kinoshita and Hirose are similar in terms of principles of forming images because the specimen is placed before the photocathode in both references, and it is allegedly reasonable to combine Hirose with Kinoshita in order to arrive at the claimed subject matter.

However, the rear portions of the devices are completely different from each other between Kinoshita and Hirose in terms of the constitutions for focusing electron beam to form an image. Specifically, the structures and the functions of the electromagnetic coils are different from each other between Kinoshita and Hirose. Actually, the resolution r is defined as $r \propto WL/V$ (W is an energy of photoelectron right after being emitted from a photocathode, L is an acceleration distance of electron, V is an acceleration voltage) in Kinoshita. In other words, in Kinoshita, the resolution r can be improved by increasing an acceleration voltage, and the resolution r cannot be improved by increasing the level of magnetic field B .

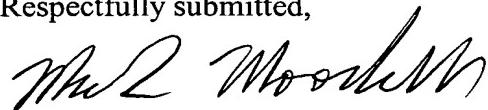
On the other hand, in Hirose, the resolution r is defined as $r \propto \sqrt{(2mE)\sin\theta eB}$. In Hirose, because E corresponds to V , the resolution r is degraded by increasing an acceleration voltage, i.e., by increasing an energy of electron, contrary to Kinoshita. Moreover, in order to perform the same level of resolution, only 0.2T is required in Kinoshita, whereas 10T, which is incredibly high, is required in Hirose.

Accordingly, it is respectfully submitted that a person having an ordinary level of skill in the art at the time of the application could not arrive at the claimed subject matter based on Kinoshita, Hirose, Nagai and Tomie.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1 and 6-16 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Date: November 16, 2005

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